Removal Action Work Plan

Avery Landing Site
Avery, Idaho

for
U.S. Environmental Protection Agency on Behalf of Potlatch Land and Lumber, LLC

April 12, 2013

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Avery, Idaho

File No. 2315-016-02

April 12, 2013

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1.0 INTRODUCTION

This document presents the Work Plan for the removal action to be completed by Potlatch Land and Lumber, LLC (Potlatch) at the Avery Landing Site (Site) in Avery, Idaho (Figure 1). The Site is a former railroad roundhouse and maintenance facility used by Chicago, Milwaukee, St. Paul, and Pacific Railroad and is located adjacent to the St. Joe River, approximately one mile west of the town of Avery, in Shoshone County, Idaho. The Site is formally referenced in the U.S. Environmental Agency (EPA) database as Avery Landing (EPA ID No. IDD984666313).

~~Based on the results of previous environmental investigations (URS, 1993; E&E, 2007; Golder, 2010 and GeoEngineers, 2011), diesel and heavy oil range petroleum hydrocarbons and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances (including volatile organic compounds [VOCs], semi volatile organic compounds [SVOCs], carcinogenic and non carcinogenic polycyclic aromatic hydrocarbons [PAHs], polychlorinated biphenyls [PCBs], and metals) have been released to soil and groundwater at the Site. The migration of these contaminants in the subsurface soils at the Site has also resulted in ongoing releases to the adjacent surface water body, the St. Joe River.~~

Pursuant to ~~In accordance with~~ the Draft Final Engineering Evaluation/Cost Analysis (EE/CA; E&E, 2010) ~~,~~ and as set forth and described in the Action Memorandum for the Avery Landing Site (EPA, 2011), and as otherwise required by EPA, Potlatch will perform removal actions followed by Site-wide post-removal action groundwater monitoring to address Site contaminants. T~~t~~he removal action will involve the ~~removal of~~excavation and off-Site disposal of ~~petroleum~~contaminated soil ~~for off-Site landfill disposal~~, removal of the existing petroleum recovery/containment systems, backfilling and re-grading of ~~remedial~~removal excavations areas followed by Site stabilization~~restoration~~. General construction guidelines will be implemented to protect the community and workers throughout the duration of the removal action. Additionally, Best Management Practices (BMPs) will be implemented to control for potential short-term cleanup-related impacts to workers, the community, and the environment.

Commented [EL1]: Substitute "removal" for "remedial" wherever found.

Commented [PL2]: Remedial has been replaced.

The primary objective of this Work Plan is to describe the general approach, conceptual design and assumptions for the removal action~~, to mitigate the release of oil and hazardous substances into the St. Joe River, and to protect human health and ecological receptors.~~ Supporting documents to this Work Plan include a Quality Management Plan (QMP), Site Specific Sampling Plan (SSSP), Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP) Set, Contingency Plan and Community Outreach Plan. These documents are presented in Appendix A through F, respectively.

2.0 BACKGROUND INFORMATION

2.1. Site Location and Land Use

The Site is located in the St. Joe River Valley of the Bitterroot Mountains in northern Idaho, approximately one mile west of the town of Avery in Shoshone County (Figure 1). The St. Joe River borders the Site to the south and Highway 50 borders the Site to the north. The Site is located

within the northeast quarter of Section 16, Township 45 North, Range 5 East, and the northwest corner of Section 15, Township 45 North, ~~Range~~and Range 5 East.

The Site currently consists mainly of graded gravel yards and small amounts of vegetative growth over previously backfilled areas. The eastern portion of the Site currently contains a vacation cottage on the property owned by Larry and Ethel Bentcik (Bentcik) ~~Property~~. Land uses in the area around the Site are largely rural and recreational. The St. Joe River is a recreational waterway. There are several areas of commercial land nearby, including a motel and recreational vehicle park located across the river from the Site.

2.2. Historical Operations and Site Use

Historically, the Site was used as a switching and maintenance facility for the Milwaukee Railroad from 1907 until 1977. The facility included a turntable, roundhouse, machine shop, fan house, engine house, boiler house, storehouses, coal dock, oil tanks, a pump house, 500,000-gallon diesel and fuel oil above ground storage tank (AST) and other aboveground structures. Facility operations included refueling locomotives, cleaning engine parts, and maintaining equipment. During the mid-1910s, Milwaukee Railroad began to operate electric locomotives which continued to the mid-1970s.

Milwaukee Railroad filed bankruptcy (presumably in the late 1970s) and then reorganized under the name CMC Real Estate Company (CMC). Under CMC, the properties were sold and otherwise divested. Potlatch leased portions of the Site from the Milwaukee Railroad from 1973 to 1980. In 1980, Potlatch acquired the western portion (Section 16) of the Site. The eastern portion (Section 15) of the Site reverted back to the family of the previous owner (before Milwaukee Railroad began operations) who sold the property to David Thierault. In 1996, Mr. Thierault sold this property to Mr. Larry Bentcik, who is the current property owner. The original railroad grade along the northern edge of the Site was acquired by the Federal Highway Administration (FHWA) for use in the construction and expansion of State Highway 50.

Historical railroad facilities on the eastern portion of the Site included an office, store house, oil pipes, and sand, coal, and oil storage. Many of the former Milwaukee Railroad facilities, including the turntable, roundhouse, engine house, machine shop, and cinder pit, were located on the western portion of the Site. The buildings and equipment associated with the former railroad maintenance facility were presumably demolished at some point after Milwaukee Railroad ceased operations. Presently, there is little remaining at the Site to indicate its previous use as a railroad switchyard and maintenance facility, with the exception of concrete slab and rail lines remnants.

2.3. Previous Investigations

Several environmental investigations have been performed at the Site since the late 1980s. In the late 1980s, the State of Idaho Division of Environmental Quality of the Idaho Department of Health (now Idaho Department of Environmental Quality [IDEQ]) began to investigate the Site. Investigations by the IDEQ included installation of several monitoring wells and test pits in the late 1980s and early 1990s. These investigations determined that free product was a mixture of diesel and heavy oil and was present at the water table throughout the Site, with product thicknesses exceeding four feet in some locations.

In 1992, URS Consultants, Inc., (URS) performed an ~~-site~~ investigation at the Site on behalf of EPA to collect~~ed~~ soil, groundwater, and surface water samples from the Site and surrounding area (URS, 1993). Analytical results indicated the presence of contaminants, including VOCs, SVOCs, metals, and PCBs.

In 2007, Ecology and Environment, Inc. (E&E) performed a removal assessment at the Site on behalf of EPA to investigate environmental impacts related to historical Site use (E&E, 2007). During this study, evidence of petroleum hydrocarbons was observed in groundwater and subsurface soil throughout the Site. In addition, petroleum hydrocarbons were observed along an approximately 200-foot stretch of the Site's river bank. Subsurface soil and groundwater samples collected from the Site also contained carcinogenic PAHs (cPAHs), PCBs and metals (arsenic, iron, lead, manganese and mercury).

In 2009, Golder Associates on behalf of Potlatch performed additional soil and groundwater investigations to further evaluate Site conditions and to support preparation of an EE/CA (Golder, 2010). A component of the Potlatch EE/CA investigation was a treatability study to evaluate soil washing as a potential treatment method for petroleum-contaminated soil.

Supplemental investigation activities were later performed by GeoEngineers on behalf of Potlatch in 2011 to further delineate two areas on the western portion of the Site where evidence of petroleum hydrocarbon product and/or sheen was observed during previous investigations (GeoEngineers, 2011). Test pit explorations and measurements of depth-to-product/groundwater were used to evaluate the presence of petroleum hydrocarbon contamination.

Detailed information regarding investigations completed prior to 2010 is presented in the EPA EE/CA (E&E, 2010). Detailed information regarding investigations completed after 2010 is presented in the Supplemental Site Investigation Report (GeoEngineers, 2011).

2.4. Regulatory History and Cleanup Actions

Pursuant to agreements with the Idaho Department of Environmental Quality (IDEQ), Potlatch installed and operated a free product recovery system (FPRS) from 1994-2000 to capture diesel and heavy oil discharging into the St. Joe River. The FPRS consisted of four subsurface extraction trenches and four extraction wells, an above ground storage tank (AST), and an infiltration trench. Recovered product was stored in the AST for off-Site disposal. During the system's operation, approximately 1,290 gallons of product (Farallon, 2006) were recovered from the Site. Despite operation of the FPRS, product continued to discharge to the St. Joe River. Under direction from the IDEQ, Potlatch completed additional ~~remedial~~removal actions at the Site including installation of a product containment wall and extraction wells in 2000 to prevent product discharges to the St. Joe River. However, as a result of the continued presence of petroleum seeps and sheen in the St. Joe River, the IDEQ requested the assistance of EPA in 2006 to investigate the Site and the petroleum discharge to the St. Joe River.

In 2008, Potlatch entered into an Administrative Settlement Agreement and Order on Consent (ASAOC; Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] Docket No. 10-2008-0135) with EPA to complete an EE/CA, a Biological Assessment (BA) and a Cultural Resources Evaluation (CRE) for the Site. In 2010, the EPA completed the ~~final~~ EE/CA

(E&E, 2010) for the site. Based on the ~~final~~ EE/CA, EPA prepared and issued the Action Memorandum for the Site in 2011 (EPA, 2011),

During the summer/fall of 2012, EPA performed cleanup activities on the parts of the Site owned by ~~Larry and Ethel Bentcik (~~Bentcik~~)~~, the United States administered by the FHWA, the Idaho Department of Lands (IDL), and Potlatch to remove contaminated materials from the Site. Contaminated materials were excavated from property owned by Potlatch and IDL to address a portion of the St. Joe River shoreline in which petroleum discharges were historically observed and to install stable side slope transitions between the Bentcik property and the FHWA property excavation areas and the Potlatch property.

In accordance with the recommended removal action alternative presented in the EE/CA dated December 2010 (E&E, 2010) and as set forth and described in the Action Memorandum for the Avery Landing Site (EPA, 2011), and ~~agreements~~ as otherwise required by with EPA, Potlatch will perform removal actions followed by Site-wide post-removal action groundwater monitoring. ~~to monitor natural attenuation of Site contaminants.~~

2.5. Nature and Extent of Contamination

Based on the results of previous environmental investigations and experience gained by EPA as part of the 2012 removal action, petroleum hydrocarbon contaminated soil at the Site could extend as deep as approximately 20 feet below ground surface (bgs). During EPA's 2012 removal action, multiple lenses of varying thickness of clean and petroleum contaminated soil were encountered to final depth of the excavation. In some instances, the contaminated lenses were encountered in soil as shallow as 2 feet (bgs).

The estimated horizontal extent of petroleum contaminated soil remaining at the Site following completion of EPA's 2012 removal action activities is shown on Figure 2. Detailed information regarding the nature and extent of contamination at the Site is presented in EPA's EE/CA (E&E, 2010) and Potlatch's Supplemental Investigation Report (GeoEngineers, 2011). The final extent of contamination to be excavated at the Site will be determined in the field by~~based on field screening results and consultation with~~ EPA.

2.6. Sensitive Species and Environment

A BA~~biological assessment~~ was completed for the Site in 2011 (E&E, 2011). The results of this assessment identified the Canada lynx (*Lynx Canadensis*) and the bull trout (*Salvelinus confluentus*) as two threatened and or endangered species that may be present at the Site. Based on the conclusions of the BA~~biological assessment~~, the planned removal action for the Site will have ***no effect*** on Canada lynx and ***may affect but is not likely to adversely affect*** bull trout. In addition, the biological assessment concluded that the implementation of ~~best management practices (~~BMPs~~)~~ and conservation measures would limit the potential adverse effects of the removal action on these species. Recommended measures to avoid or minimize impacts on these species include:

- BMPs and temporary erosion and sedimentation controls (such as silt fencing, straw bales, and sediment ponds) for minimizing the potential direct and indirect adverse effects of short-term construction activities such as erosion, dust, noise, and sedimentation;

- Conducting shoreline excavation and reconstruction activities during the late summer/early fall authorized in-water work window to minimize potential negative impacts on the aquatic environment; and
- Planting of native trees and shrubs within the riparian zone for improving existing aquatic habitat along the St. Joe River.

2.7. Cultural Resources

In May 2012, Applied Archeological Research, Inc. (AAR) conducted a cultural resources survey at the Site on behalf of EPA in response to recommendations provided by the Idaho State Historic Preservation Office in their Class I Inventory Literature Review letter dated April 21, 2011 (ISHS, 2011). During the cultural resources survey, AAR identified fiveour architectural features and three scatters of historical or likely historical artifacts and/or demolition debris at the ground surface on the Potlatch pProperty (AAR, 2012). Architectural features include concrete foundations for a roundhouse bay stall, lead railroad tracks to the roundhouse bay, boiler house and turntable. Artifact scatters include brick debris and glass bottles with limited markings. Based on these findings, AAR recommended the following:

- A cultural resource monitor observe excavation activities in the vicinity of the four identified architectural features to ensure that the details of the layout, construction and engineering of these feature are documented; and
- Field personnel conducting the removal action be aware of the potential archeological artifacts at the Site.

Identified architectural features are shown relative to the historical railroad facility layout on Figure 2.

3.0 REMOVAL ACTION REQUIREMENTS AND OBJECTIVES

In general, EPA's selected removal action requires the excavation of subsurface soil contaminated with petroleum hydrocarbons (diesel and heavy oil) and other contaminants that are comingled and cannot be segregated. Removal of this material is expected to significantly reduce or eliminate the source of contamination at the Site and to prevent the continued discharge of petroleum hydrocarbons and hazardous substances into the St. Joe River. Residual contamination remaining at the Site is expected to attenuate by way of natural processes and the progress of the attenuation will be monitored over-time, following the completion of the removal action.

The objectives of the Potlatch Property removal action are to:

- Remove the remaining components of the product containment, collection, and extraction systems that were installed as part of the 1994 and 2000 removal actions;
- Remove soil exceeding field screening methods within the upland and river bank areas;
- Remove, treat, and/or manage petroleum product that is present as light non-aqueous phase liquids (LNAPL) on groundwater within the excavations;
- Dispose of waste streams in accordance with CERCLA's off-site rule requirements; and

- Restore portions of the Site affected by the removal action including, backfilling, compacting and grading the excavation, reconstructing the river bank and re-vegetating parts of the Site.

The conceptual design and preliminary approach for the removal action that will be performed by Potlatch is summarized in the following section (Section 4.0).

4.0 REMOVAL ACTION CONCEPTUAL DESIGN AND PRELIMINARY APPROACH

Based on the results of previous environmental investigations completed by Potlatch and others, the removal action is estimated to include excavation of approximately 44,000 in-place cubic yards (cy) of overburden soil overlying the contaminated soil and approximately 16,500 in-place cy of contaminated soil. The removalediation area is approximately 100,500 square feet (2.3 acres) in size. However, tThe actual quantities of excavated soil may be greater or less than these estimates based on the field screening results ~~of the field screening methods~~ at the excavation limits (see Section 4.4). In general, overburden soil and material placed along the FHWA and Potlatch property, IDL and Potlatch, and Bentcik and Potlatch property boundaries during the 2012 EPA removal action (transition zone material) will be excavated and stockpiled for use as backfill and to access the underlying contaminated soil. Excavation activities will be sequenced to preventreduce the potential recontamination of backfilled soils.

Site features, including the location of the Potlatch, Bentcik, IDL, and FHWA properties and residual contamination area are shown on Figure 2. No Site work will be performed until this Work Plan has been approved by EPA. Additionally, no Site work will occur on the Bentcik property, IDL property or the FHWA property without prior approval by EPA and the respective land owners.

4.1. Temporary Site Controls

Temporary controls will be utilized to control Site access, traffic, erosion/stormwater pollution, dust, noise and spills. The planned temporary Site controls for the removal action are shown on Figure 3.

4.1.1. *Site Access Control*

Temporary fencing (orange safety fencing or similar), barricades, signage and/or traffic control will be used~~, as necessary,~~ to control access to the Site during both working and non-working hours. Prior to the start of work, the Potlatch contractor will be responsible for installing fencing and/or other means to restrict general public access to work areas (i.e., construction staging, soil staging pads and water treatment areas) at the Site. Signage will be posted around the perimeter of the Site, including the shoreline of the St. Joe River to discourage and prohibit unauthorized entry of persons to the work areas.

Vehicle access to the Site will be from Highway 50 at one of four available access points (Figure 3). Signage will be positioned along Highway 50 to notify oncoming traffic of construction vehicles entering the roadway. During contaminated soil export, dump trucks leaving the Site will be offset ~~Flaggers may be used to control vehicle traffic into and out of Site, as necessary~~ to minimize disruptions to traffic on Highway 50. To the extent practical, all other construction related

Commented [EL3]: Under what conditions will flaggers be necessary?

Commented [PL4]: See revised text.

equipment will remain on Site and refrain from using Highway 50. ~~be contained with the established work areas of the Site.~~

Site access controls will be maintained throughout the duration of the project. Flaggers will be used in cases where truck entrance to the highway cannot be safely completed without disruption to the regular flow of traffic.

4.1.2. *Erosion Control and Stormwater Pollution Prevention*

~~Best management practices (BMPs) will be used throughout~~ Throughout the removal action, BMPs will be used for the control of erosion, stormwater, and fugitive dust, and to avoid adverse impacts on wildlife and their habitats. The BMPs to be implemented during this removal action are based on the Catalog of Stormwater Best Management Practices for Idaho Cities and Counties (IDEQ, 2005), the U.S. Army Corps of Engineers (Corps) Nationwide Permit 38, and professional experience.

Erosion control measures to prevent stormwater pollution will include:

- Use of silt fencing, silt dikes, fabric filter fences, straw bales, interceptor swales, wattle and rock check dams, and/or similar BMPs to prevent sediment from entering the St. Joe River;
- Stabilizing Site access points using quarry spalls, rumble mats or other effective materials to minimize the tracking of sediment onto the Highway 50;
- Cleaning Highway 50 ~~as necessary,~~ to remove tracked out soil; and
- Securing and covering of stockpiled soil with soil berms and/or plastic sheeting to protect from wind, rain, and other disturbances, as conditions warrant.

Erosion control measures will be inspected daily prior to the start of work, periodically during Site work and following daily construction activities to ensure their effectiveness. For example, Highway 50 will be inspected on a regular basis during contaminated soil export or backfill material import to ensure that soil is not being tracked off-Site. Similarly, stockpiles and other BMPs will be inspected on a regular basis ensure that sediment is not entering the St. Joe River and that stockpiled material is effectively being contained.

4.1.3. *Dust and Noise Control*

Engineering controls will be used during construction to prevent the off-Site transport of airborne particulates/fugitive dust generated by the removal action. Controls will include wetting or covering exposed soil and stockpiles to prevent dust generation.

Construction noise will be generated by a variety of construction equipment, including truck engines, generators and other small engines, and earthmoving equipment. Construction noise will be generally limited to daylight hours between 7:00 AM and 6:00 PM, Monday through Saturday.

4.1.4. *Spill Response*

The Contingency Plan contained in Appendix E will be utilized to reduce the risk of spills, including the release of fuel, hydraulic fluid, and contaminated groundwater, and to establish an efficient response strategy. An emergency spill response and containment kit will be located at the Site to

address spills. Spilled material and expended clean-up materials will be disposed of off-Site at an appropriate disposal facility.

Refueling or machinery maintenance operations will be conducted in a manner that will prevent releases to Site soils or the adjacent St. Joe River. Fuel hoses, fuel drums, oil or transfer valves and fittings, and any motorized equipment used during the project will be inspected daily for drips or leaks.

4.2. Construction Site Layout

As part of Site preparation, access roads, construction staging areas, water treatment areas, and temporary facilities will be constructed to support the removal action. Construction of aAccess roads and/or staging areaspads, ~~if constructed,~~ may require limited grading and placement of a geotextile and/or gravel on the graded surface. The actual locations of the temporary access roads, staging areas, equipment pads, temporary construction facilities (travel trailer, water treatment system, temporary utilities, etc.), and vehicle loading zones will be determined in the field prior to the start of the removal action. The temporary staging area, water treatment area~~detention~~ and other facilities will be located in areas that are expected to not interfere with construction operations or vehicle traffic. The existing contaminated soil staging pads that were constructed by EPA ~~for the Bentcik and FHWA property~~ as part of the 2012 removal action may also be used~~will be used~~, to the extent they are needed, for the Potlatch removal action.

Upon completion of the removal action, all disturbed areas such as the areas used for construction staging, water detention, soil stockpiling and temporary facilities, including the contaminated soil staging pads constructed by EPA will be restored (i.e., removal of gravel and/or geotextile used to construct these areas followed by the removal and, off-Site disposal of contaminated materials, grading of disturbed surfaces and placement of soil, ~~and~~ geotextile, ~~grading,~~ and/or seeding to prevent erosion). Additionally, the silt fencing left in-place by EPA for use by Potlatch will also be removed.

4.2.1. *Construction Staging Area*

At present, a portion of the Potlatch property located west of the excavation areas is anticipated to be used for staging construction trailers, contractor vehicle parking, and storage of supplies. The tentative location of the Construction Staging Area is shown relative to the Site on Figure 3. The actual location of the Construction Staging Area will be determined in the field during the contractor mobilization.

Temporary telephone, power and other infrastructure will be brought to the staging area and connected to the construction trailers. These services will also be made available for use by EPA who will supply their own trailer.

4.2.2. *Contaminated Soil Staging Pads*

The existing contaminated soils staging pads constructed by EPA will be used to the degree needed, for the temporary storage of soil generated from the removal action (Figure 3). The pads are lined with a minimum of 12-mil thick, reinforced polyethylene liner surrounded by an approximately 2-foot-tall earthen dike with 1:1 slopes. The surface within the soil staging pads are

Commented [EL5]: This sentence is inconsistent with the preceding sentence.

Commented [PL6]: See revised text.

sloped (at an approximate 1 percent grade) toward collection sumps to remove excess water resulting from precipitation or soil dewatering. The contaminated soil staging pads have been constructed to stockpile approximately 9,000 cy of soil. If used and during non-working hours (i.e., at night or on weekends), the staging pads will be covered and secured from wind, rain, and other disturbances. The contaminated soil staging pads will be maintained throughout the duration of the removal action for use as needed.

4.2.3. *Water Treatment Area*

The water treatment area will be located in the general vicinity of the excavation areas and will be used to temporarily store and treat water generated during the removal action prior to discharging to the St. Joe River or use on-Site such as for dust control. The preliminary planned location of the water treatment area is shown on Figure 34. The actual location of the water treatment area will be determined in the field. Specific details of the water treatment system are further discussed in Section 4.6.

4.3. Site Preparation

4.3.1. *Utility Locate and Services*

Prior to start of Site work, local utility companies will be contacted to obtain service for the temporary on-Site facilities that will be utilized during implementation of the removal action (i.e., water-treatment facility, temporary construction trailers, etc.). In addition, utility locating agencies will be contacted in order to identify the utilities that exist at the Site in the vicinity of the work areas. Active utilities located within/adjacent to the excavation areas such as the existing community sewer line will require temporary or permanent relocation. Potlatch will meet with the respective utility owners prior to construction to develop a relocation plan. Upon completion of the removal action, all disturbed utilities will be returned to their original location or situated as agreed to with the utility owner.

Commented [EL7]: Will a formal, written plan will be submitted to EPA for review and comment or will a field procedure will be developed.

Commented [PL8]: No formal submittal to EPA is anticipated. Potlatch will provide EPA details on the relocation plan however, Potlatch does not anticipate the need for a formal approval by EPA given that the work would be done to the satisfaction of the utility owner.

4.3.2. *Clearing and Grubbing*

Vegetated areas that will be excavated will be cleared and grubbed as part of the removal action. Clearing will consist of the falling, trimming, and cutting of trees, brush, and shrubs. Cleared vegetation either will be cut off flush with or below the original ground surface or removed entirely. Clearing and grubbing activities will be limited to only those areas requiring soil disturbance for performing removal~~edial~~ excavation or installation of temporary site controls and/or staging areas.

4.3.3. *Well Decommissioning*

Monitoring and product recovery wells located within the removal area will be decommissioned ~~in accordance with applicable rules and regulations as part of the removal action.~~ by a well driller licensed in the State of Idaho per Idaho Code 42-238 unless a waiver has been granted by the State of Idaho Department of Water Resources. Wells will be abandoned in a manner compliant with IDAPA 37.03.09 Well Construction Standards Rules. Appropriate measures will be taken to protect monitoring wells that are identified in the field and are located outside of the excavation area.

Unless previously decommissioned by EPA, it is anticipated that existing monitoring wells GA-1, GA-4, EMW-03, EMW-04, EMW-05, 1024, 1025, 1030, 1031 and HC-1R, and product extraction wells EW-1 and CW-01 will require decommissioning prior to the start of work. Well decommission activities will be completed by a qualified, licensed driller. Documentation of the well decommissioning will be provided to the State of Idaho.

4.4. Soil Excavation

Soil excavation will be completed using commonly available excavation equipment and standard earth work methodology. Soil excavation activities, including the excavation extent and sequence, soil segregation and stockpiling, excavation dewatering, water treatment, and backfilling and compaction are described in the following sections (Sections 4.4.1 through 4.4.7).

It is anticipated that the area of open excavation will be kept as small as possible to minimize the dewatering requirements. To meet this objective, the excavated overburden and transition zone material that passes the field screening criteria will be temporarily stockpiled adjacent to the excavation for use as backfill. The backfill material will be returned to the excavation once the field screening criteria have been met within the active excavation and the excavation has been advanced horizontally to a sufficient distance to allow for the placement of the backfill on the complying surface. A trench will be maintained between the backfilled area and active excavation to prevent cross-contamination.

If required by the selected landfill, contaminated soil generated by the removal action will be temporarily stockpiled on Site for characterization and waste acceptance. If additional testing is not required by the selected landfill, contaminated soil generated from the excavation will be transferred to the disposal facility without additional characterization. Potlatch will provide EPA with copies of all correspondence with the selected landfill regarding testing requirements prior to initiating disposal activities. Excavated material may however, be temporarily stockpiled on-Site prior to transport regardless of the landfill testing requirements to manage materials throughput and trucking capacity. Off-Site transport and disposal of materials generated by the removal action is further discussed in Section 4.5

4.4.1. *Field Screening*

The segregation of overburden, transition zone, and contaminated materials during excavation and final extent of excavation will be based on field screening methods (i.e., presence of free-phase petroleum hydrocarbons, oil-stained soil, sheen exceeding the field screening criteria, or elevated organic vapor). If the field screening methods indicate the presence of petroleum contamination at the expected limit of excavation, then ~~need for additional excavation will be evaluated.~~ Eexcavation activities will extend laterally until field screening evidence of petroleum contamination is no longer observed. The final limits of excavation will be determined~~approved~~ by EPA.

Details on the field screening methods, testing procedures and action levels are described in the SSSP and QAPP presented in Appendix B and C, respectively.

Commented [EL9]: Describe what procedure will be followed to ensure waste transport vehicles departing the Site are suitable for off-Site transport of contaminated materials (e.g., covered, possess a proper bill of lading, etc.).

Commented [PL10]: Refer to Section 4.5 for off-site disposal of materials.

Commented [EL11]: Describe the type of wheel wash unit to be placed or constructed to prevent tracking contaminated materials off-Site and where this unit will be placed.

Commented [PL12]: As indicated in Section 4.1.2, access points (shown on Figure 3) will be stabilized using quarry spalls, rumble mats or other effective materials to minimize the tracking of sediment onto the Highway 50. If these BMPs are not effective in minimizing the off-site transport of soil from the site, then additional BMPs (including installation of a wheel wash unit) will be considered and implanted as conditions warrant.

4.4.2. *Excavation Extent and Sequence*

It is anticipated that the excavation will generally start in the northeast portion of the Potlatch Property and progress to the southwest toward the St. Joe River to minimize the potential for recontamination of the backfill material. The ~~estimated~~ river bank excavation will be implemented only during the authorized in-water work window (July 15 to September 1, 2013). Excavation activities that will be performed along the St. Joe River are further described in Section 4.4.7. The anticipated extent of excavation based on previous study results ~~excavation plan to remove contaminated soil at the Site~~ is shown on Figure 4 and in generalized cross-section on Figures 5 and 6.

In response to AARs cultural resource recommendations (see Section 2.7), field personnel conducting the removal action will be made aware of the potential archeological artifacts that may be present at the Site. Additionally, ~~It is anticipated that the specific a~~archeological features identified by AAR during their cultural resources survey (AAR, 2012) will be documented ~~"pre-cleared"~~ prior to the start of the mass excavation at the Site. ~~For the pre-clearing step, a~~An archeological monitor will be present to document the layout, construction and engineering of the identified architectural features located within limits of excavation prior to disturbance~~removal~~. Identified architectural features are shown relative to the anticipated extent of excavation on Figure 4. If additional historical artifacts or architectural features are encountered during the removal action, work activities in the general vicinity of the potential artifact/architectural feature will stop and an archeological monitor notified. The archeological monitor will determine the significance of the discovery and what additional steps, if any, are required.

The contact between the overburden and underlying petroleum contaminated soil as well as the lateral extent of contaminated soil will be determined based on field screening (Section 4.4.1). Excavation activities will extend laterally until field screening evidence of petroleum contamination is no longer observed. Excavation activities will extend vertically until field screening evidence of petroleum contamination is no longer observed or to a depth of approximately two feet below the seasonal low groundwater level of 17 feet bgs. Excavation sidewalls will be maintained at an approximate 1.5:1 slope. If necessary, the excavation sidewalls will be laid back further to maintain a stable slope. The final limits of excavation will be determined by EPA.

Clean backfill soil placed within the transition zone between the FHWA and Potlatch, IDL and Potlatch, and Bentcik and Potlatch removal action areas by EPA (Figure 4) will require partial removal to access the full depth of contamination on the Potlatch property. The clean backfill will be removed and field screened to verify that this material has not been impacted by the residual petroleum contamination present on the Potlatch property since completion of the 2012 removal action by EPA. EPA utilized a white geotextile where the backfill material was placed on the contaminated soil within the Potlatch property transition. If during the course of the removal action, contaminated soil becomes inaccessible, a~~The~~ geotextile will be placed between the inaccessible portion of contaminated soil and backfill material ~~used~~ as an environmental marker to denote the presence of subsurface contamination.

Clean overburden and transition zone backfill material generated during the excavation will be temporarily stockpiled adjacent to the excavation for reuse to fill the excavated area. It is anticipated that backfilling activities will be conducted concurrently with excavation activities to

Commented [EL13]: The maximum extent of river bank excavation shown on Figure 4 is only estimated. The actual extent of excavation will be determined by EPA based on field screening methods.

Commented [PL14]: Details regarding the river bank excavation are described in Section 4.4.7.

Commented [EL15]: Describe how this approach will address the requirement for a cultural resource monitor to watch any earthmoving or other ground-disturbing activities in that part of the Site related to the features of concern.

Commented [PL16]: As recommended by AAR, the identified features will be documented (see Section 2.7). Additionally, field personnel will attend an orientation to become familiar with other potential artifacts/feature (if encountered). If encountered, excavation will stop and the archeological monitor notified of the discovery who will in turn provide recommendations for moving forward.

Commented [EL17]: Clarify the meaning of this sentence.

Commented [PL18]: See revised text.

minimize size of the open excavation area and dewatering demands. Limitations in the available area adjacent to the excavation may require that overburden and/or transition zone backfill soil be temporarily stockpiled away from the excavation in other portions of the property. Stockpiled material will be secured until it can be reused for backfill in the removal excavation. BMPs will be utilized to prevent erosion (see Section 4.1.2)~~such as the soil staging pads~~.

Depending on the amount of rock estimated to be present, the excavated material generated from the petroleum-contaminated layer may be screened to segregate out the rock for reuse as backfill. In general, material generated from the contaminated layer would be processed through a screening machine to remove contaminated soil and other demolition and woody debris from the rock. Screened rock for which cleaning is unsuccessful or impractical, would be transported form the Site for landfill disposal. At present, it is not known if rock screening will be proposed. The decision to pursue this option will be determined based on observation of the amount of potentially reusable rock within the completed excavations. If the rock volume is determined to be sufficient to make use of the rock screen cost effective, then the methods and procedures for screening the material will be proposed to EPA as an addendum to this Work Plan. Use of rock screens will not be employed until approved by EPA.

Based on historical records, reinforced concrete foundations from former railroad structures will likely be encountered during soil removal activities. If encountered, these foundations will be broken into manageable-sized pieces and stockpiled on Site. Similar to the approach used by EPA in 2012, concrete and brick debris that do~~es~~ not exhibit evidence of contamination, or can be efficiently cleaned will be used as backfill. Petroleum contaminated concrete and/or brick debris in which contaminated soil removal is unsuccessful or the level of contamination makes the soil removal impractical will be transported off site for landfill disposal. Additionally, wood debris and other demolition debris not suitable for reuse will be removed from the Site for landfill disposal. Disposal of metal debris is further discussed in Section 4.5.4.

~~In the event that Site conditions prohibit further excavation of contaminated materials (i.e., at the base of excavation) excavation activities will be halted. In such cases, a woven geotextile fabric will be placed at the excavation limit to serve as an environmental marker between the residual petroleum contamination and backfill.~~

Shoreline excavation activities will be limited to the in-water work period from July 15 to September 1, 2013 to minimize potential negative impacts on the aquatic environment. Further details on the shoreline excavation are presented in Section 4.4.7.

4.4.3. *Excavation Dewatering*

Dewatering activities will be completed as necessary to manage the groundwater level within the excavation area during removal activities. To minimize the need for dewatering, soil below the groundwater table will be removed during anticipated periods of low water in the St. Joe River (July to October). Further, to reduce the amount of dewatering, the area of open excavation will be minimized during construction.

Based on observed conditions during EPAs 2012 removal action, it is anticipated that a water treatment system capable of treating water at a rate of 300 gallons per minute (gpm) will be

Commented [EL19]: This statement requires clarification. For example, the soil staging pads were used by EPA for staging of contaminated materials, and any temporary staging of clean material is susceptible to recontamination.

The location of a new soil staging pad should be shown on Figure 3.

Commented [PL20]: See revised text.

Commented [EL21]: Also describe how petroleum contaminated demolition and woody debris will be addressed (e.g., will this material be decontaminated and recycled or transferred directly to the disposal facility?).

Commented [PL22]: See revised text.

sufficient to support dewatering of the excavations. If present, free-phase petroleum hydrocarbons or oil sheen on the groundwater surface will be contained using oil sorbent booms or similar to prevent recontamination of backfilled soil. To prevent contamination of the saturated zone below the petroleum contamination, the groundwater level within the excavation will not be lowered to an elevation below the smear zone.

The dewatering system will be installed to allow operation without interfering with other construction activities. Water removed from the excavation will require treatment by the temporary water treatment system prior to discharge to the St. Joe River or reuse for dust suppression or other on-site activities. BMPs will also be used to direct stormwater away from the excavation areas to minimize the volume of water requiring treatment.

4.4.4. *Excavated Soil Stockpiling and Dewatering*

Excavated overburden and transition zone material generated during the removal action which passes the field screening criteria will be stockpiled temporarily near the excavation area to minimize cross-site transport and to make the material readily available for use as backfill.

Potlatch is currently working with Waste Management to obtain a landfill use authorization for disposal of excavated material from the removal action. The landfill use authorization will specify any stockpile sampling requirements for the excavated material disposal. If stockpile testing is required by the landfill prior to disposal, then the contaminated soil from the excavation will be temporarily stockpiled pending characterization and waste acceptance in accordance with the SSSP (see Appendix B). If stockpile testing is not required by the landfill, contaminated soil generated from the excavation will be transferred to the disposal facility without additional characterization. In this case, the soil may either be loaded directly to haul trucks or temporarily stockpiled on-Site prior to transport to manage material throughput and trucking capacity. Contaminated soil generated from the saturated zone will be temporarily ~~ity~~ stockpiled on Site (either on a contaminated soil bench within the active removal excavation or within one of the three contaminated staging pads) and allowed to dewater ~~if necessary,~~ until visible evidence of dewatering from the stockpile is no longer observed. The contaminated soil will be transported off-Site after ~~a representative~~ soil samples obtained from the stockpile pass the Paint Filter Test[1] (PFLT) ~~(~~; EPA Method 9095). Liquids dewatering from the stockpile either will be collected and transferred to the water treatment system for processing or directed back into the excavation.

Commented [EL23]: Specify where the contaminated material will be temporarily stockpiled on-Site (e.g., soil staging pads).

Commented [PL24]: See additional text.

4.4.5. *Backfill of Removal Area*

Excavated overburden that meets the field screening criteria and clean transition area soil placed by EPA in 2012 will be put back into the completed areas of the excavation concurrent with the removal activities. A trench will be maintained between the active excavation and backfill to prevent cross-contamination. Clean water will be added to the backfill material if it is too dry for adequate compaction. Backfill will be placed in the excavations using 24-inch lifts or less and will be compacted with equipment suitable for the soil type with the goal of achieving 90 percent of the maximum relative density. Compaction monitoring and test methods are presented in the SSSP. ~~If~~

[1] Field test that involves suspending a conical paint filter (mesh number 60 +/- 5 percent) filled with a representative, approximate 100 gram soil sample from a tripod or ring stand for five minutes (EPA, 2012). If any liquid drips from the filter, the material will be deemed to contain free liquids and will be allowed to further dewater until which time representative samples pass the paint filter test.

~~the backfill soil condition is not favorable to re-vegetation then the~~ The final backfill surface may be ~~surface soils will be~~ amended or a four-inch minimum layer of topsoil ~~will be~~ placed to create favorable conditions for Site stabilization activities discussed in Section 4.10. No compaction is required for the final grade.

Clean backfill will be imported to the Site ~~as needed~~ to reconstruct the approximate pre-construction grades at the Site. The approximate final grades are shown on Figure 7. The source of the imported fill material will be determined as part of the construction mobilization. Potential sources of the imported fill material may include commercial quarries and/or other local sources (e.g., Potlatch, Shoshone County, or Forest Service). Potlatch will ensure that EPA is notified before any backfill material is obtained from County and/or federal lands. Prior to import, ~~representative~~ samples of the fill material will be collected and analyzed for chemical quality to verify that the material is clean. Density testing of the import material will be completed as necessary to manage compaction. Sampling and testing of the import fill material will be completed in general accordance with the SSSP.

4.4.6. *Product Recovery and Containment Barrier System Removal*

Existing monitoring wells and extraction wells installed as part of the 1994 product recovery system and 2000 containment barrier system will be decommissioned ~~in accordance with applicable rules and regulations~~ ~~prior to the start of excavation.~~ by a well driller licensed in the State of Idaho per Idaho Code 42-238 unless a waiver has been granted by the State of Idaho Department of Water Resources. Wells will be abandoned in a manner compliant with IDAPA 37.03.09 Well Construction Standards Rules. It is anticipated that the remnant components of these systems (i.e., polyvinyl chloride [PVC] pipes, monuments and geotextile fabric) will be removed during the excavation and appropriately disposed of off-Site. Other components of the product recovery system were previously removed from the Site by EPA during the 2012 removal action.

Commented [EL25]: Specify the applicable State rules and regulations.

Commented [PL26]: See additional text.

The approximate location of the 1994 product recovery trench and 2000 containment barrier system as previously documented are shown relative to the Site on Figure 2.

4.4.7. *Removal Activities Along the St. Joe River*

As part of the removal action, portions of State-owned ~~the~~ land administered by IDL below the ordinary high water mark of the St. Joe River and adjacent to property owned by Potlatch ~~shoreline are expected to~~will be excavated and reconstructed by Potlatch in order to address petroleum contamination. The anticipated bank excavation area is shown on Figure 4 and is based on the extent of EPA's 2012 excavation, existing ~~S~~site soil sampling data, the location of the containment barrier system, and the historically observed zone of petroleum discharges into the St. Joe River. The actual length of affected shoreline will not be known until the upland excavation work ~~progresses~~~~is completed~~. Shoreline excavation activities will be conducted only during the allowable in-water work period from July 15 to September 1, 2013 to minimize potential negative impacts on the aquatic environment.

Removal activities along the St. Joe River will require the removal of the existing shoreline armoring (i.e., clean rip rap), base rock and/or geotextile to access overburden and underlying contaminated soil. Armoring removed from the shoreline will be evaluated for the presence of staining, sheen,

and/or free-phase product. Armor that exhibits field screening evidence of contamination will be segregated, cleaned, and reused during reconstruction of the shoreline. If cleaning of the armor stone is unable to remove the contaminated material, the armor stone will be transported from the Site for permitted landfill disposal. Additional armor stone may be imported to the Site~~, as necessary~~ to reconstruct the St. Joe River shoreline to resemble its approximate pre-construction configuration. Bank stabilization and restoration are further described in the Section 4.10.

During shoreline excavation activities, BMPs including, but not limited to use of containment berms, silt curtains and/or oil sorbent booms will be used and maintained in order to prevent sediment and/or contaminant discharge into the St. Joe River. In general, a silt curtain held in place using anchors will be deployed within the St. Joe River encompassing the shoreline excavation area as generally depicted on Figure 3. Oil sorbent booms and/or pads will be deployed between the silt curtain and shoreline capture any free-phase petroleum or sheen released during the excavation. Consistent with shoreline excavation activities implanted by EPA during the 2012 removal action, the toe of the river bank will remain in place. ~~Generally, the same practice used by EPA in their 2012 shoreline excavations will be utilized for the shoreline removal.~~ By this method, the~~a~~ narrow berm of soil that will be left in place at the river interface at the base of the slope will ~~to~~ minimize the infiltration of river water into the excavation as well as, prevent the release of free-phase petroleum and/or sheen potentially contained within the excavation to the St. Joe River.

The erosion and sediment practices implemented along the shoreline will comply with the general conditions established under the ~~U.S. Army~~ Corps ~~of Engineers~~ Nationwide Permit 38 to ensure compliance with the federal Discharge of Oil Regulation and the State of Idaho water quality standards.

4.5. Off-Site Disposal and Recycling

4.5.1. *Petroleum-Contaminated Soil*

If required by the landfill, contaminated soil will be stockpiled on-Site and sampled in accordance with the SSSP for disposal characterization. If the landfill determines that characterization of the contaminated soil is not required, contaminated soil generated during the removal action either will be directly loaded into trucks and transported from the Site for permitted landfill disposal or temporarily stockpiled on-Site and allowed to dewater prior to transport to the landfill. Temporary stockpiles may be utilized to manage materials throughput and trucking capacity.

Contaminated soil transferred from the Site for landfill disposal by properly licensed, insured, and registered waste haulers~~will be completed~~ in accordance with applicable state and federal solid waste handling and transportation regulations. Transportation contractor(s) shall provide documentation that demonstrates that they are properly licensed and are in compliance with applicable DOT regulations, as well as a copy of their contingency and spill control plans describing measures to be implemented in the event of spills or discharges during material handling and transporting.

4.5.2. *Recovered Free Product*

Free product that is recovered during the operation of the dewatering system will be transferred to 35 or 55-gallon drums and stored on-Site until completion of removal excavation. ~~Representative~~

Commented [EL27]: The use of BMPs during shoreline excavation activities must be described in greater detail. For example, EPA installed a temporary coffer dam and absorbent boom was deployed between the coffer dam and the river bank. Is it Potlatch's intent to do the same or will a different approach be pursued?

Commented [PL28]: See additional text describing the BMPs that will be used for the shoreline excavation.

Commented [EL29]: As noted in the preceding comment, the specific BMPs (and their configuration) to be employed along the shoreline must be described. Note that a silt curtain is shown on SSSP Figure B-2.

Commented [PL30]: See additional text.

Commented [EL31]: See preceding comments regarding the location of stockpiled soil and the distinction between the contaminated soil cells and other potential staging pads.

Commented [PL32]: This distinction has been made in Section 4.4.4.

~~s~~Samples will be obtained and tested from this material ~~as required~~ in accordance with the SSSP for disposal characterization. As indicated in the preceding section, this material will be transferred from the Site to a permitted ~~to meet the acceptance criteria of the licensed~~ disposal or recycling facility in accordance with applicable ~~and~~ state and federal handling and transportation regulations.

4.5.3. *Hazardous Wastes, Construction Debris and Other Material*

Based on sample results of previous environmental studies and sample results of stockpile testing completed for the Bentcik, IDL, and FHWA ~~P~~property's removal actions, it is not anticipated that soil generated from the excavation will designate as a hazardous or dangerous waste. In the event that buried debris such as asbestos cement pipe, underground storage tanks (USTs), batteries, capacitors, transformers or similar are encountered, additional testing will be completed to characterize these materials as~~evaluate whether contaminants exceed the criteria for~~ hazardous or dangerous waste. Soil designated as a hazardous or dangerous waste will be segregated and stockpiled on-Site pending treatment, waste profile authorization, and/or off-Site disposal.

As indicated in Section 4.4.2, d~~D~~ebris such as large concrete pieces or brick in which visual evidence of contamination is observed will be cleaned and used to backfill the excavation. Debris in which cleaning is unsuccessful or impractical will be transferred from the Site for permitted landfill disposal.

In the event that asbestos containing material (i.e., cement pipe) is encountered during construction, an asbestos abatement contractor will be mobilized to the Site to properly abate, remove and dispose of the asbestos containing material.

4.5.4. *Recycled Materials*

During the course of the FHWA, IDL, and Bentcik ~~P~~property's removal actions, significant quantities of metal debris were encountered in subsurface soil. Similar to the management plan used by EPA, metal debris will be cleaned and transferred off-Site to a recycled facility.

4.6. Water Treatment

Water generated from equipment and personnel cleaning, soil stockpile dewatering, dewatering of excavation areas or resulting from the accumulation of stormwater, will be treated prior to discharge into the St. Joe River or for on-Site use such as dust control. As described above, excavation activities will extend vertically until field screening evidence of petroleum contamination is no longer observed or to a depth of approximately two feet below the local groundwater table elevation of approximately 17 feet bgs.

The temporary water treatment system is designed to treat contaminants previously detected in groundwater at concentrations exceeding Idaho surface water quality criteria (Idaho Administrative Code [IAC] 58.01.02). Table 1 presents a summary of analytes detected in groundwater at the Site and corresponding maximum detected concentrations. System design, initial system startup testing and operational testing are described in the following sections (Sections 4.6.1 through 4.6.3).

4.6.1. *System Design*

The temporary water treatment system will collect, handle, containerize LNAPL, treat and discharge water generated during dewatering of excavated soil as well as rainfall runoff that accumulates in excavation or containment areas, water generated from equipment and personnel cleaning, and additional groundwater or surface water encountered or generated during removal activities. The preliminary system shown on Figures 8 and 9 has been designed to treat waste water to meet the surface water quality criteria specified in the Idaho Administrative Code (2011) at a rate of up to 300 gpm. Normal influent flow rates are expected to be less than the design maximum flow conditions based on review of the EPA's 2012 construction activities.

Temporary water treatment system components anticipated for the removal action are summarized in the following sections. In addition to the primary system components summarized below, temporary piping, flow meters, pumps, sampling ports and valves will also be used.

The temporary water treatment system will be constructed within the water treatment area. The anticipated location of the water treatment area is generally shown on Figure 3. The actual location of the system will be determined in the field prior to the start of the removal action. Silt fencing or soil berms will surround the water treatment system as BMPs ~~will be implemented~~ to prevent the release of untreated wastewater to the St. Joe River. Piping and/or trenches will be used to direct any released water ~~in~~to the open excavation area~~ss)~~.

Commented [EL33]: Describe the specific secondary spill containment system (e.g., a portable spill containment berm) within which the temporary water treatment system will be constructed.

Commented [PL34]: See additional text.

4.6.1.1. OIL/WATER SEPARATOR

Waste water generated from the Site will be pumped to the treatment system where it will pass through an oil/water separator prior to transfer into pre-treatment settling tanks. The oil/water separator will be a gravity-type unit capable of removing gross free-phase product and will include collection chamber(s) for settable sludge/solids recovery. Recovered product will be stored in 55-gallon drums.

4.6.1.2. PRE-TREATMENT SETTLING TANK

Following oil/water separation, waste water will be pumped into the settling tanks with a minimum storage capacity of 100,000 gallons. Additional pre-treatment settling tank(s) will be added to the treatment system as necessary to manage the throughput of waste water generated during construction. During initial system startup testing (see Section 4.6.2) ~~Two~~three of the ~~these~~ 20,000 gallon settling tanks may be isolated from influent water entering the system as depicted in Figure 8 ~~may be isolated and used~~ to temporarily hold treated effluent. Upon confirmation of the performance of the treatment system, the configuration of the treatment system will be modified to the general treatment setup depicted on Figure 9.

Commented [EL35]: The requirement for measuring startup performance is 50,000 gallons; thus describe how 50,000 gallons of treated effluent will be stored pending analytical results.

Additionally, if two or more of the pre-treatment settling tanks are used as part of the system startup process, describe the process for inspection and potential decontamination of the tanks to prevent cross-contamination.

Commented [PL36]: Revised text to account for up to 60,000 gallons initial treated water storage capacity.
Revised text to include an isolation valve to prevent cross-contamination between tanks.

4.6.1.3. ELECTRO-COAGULATION TREATMENT SYSTEM

An electro-coagulation (EC) treatment system will be employed to treat waste water for turbidity, suspended solids, and metals. Waste water entering the EC treatment system is monitored for pH and conductivity. After passing through the treatment cells the now treated effluent is directed to Settling Tanks where precipitated ~~&~~and coagulated material can settle out.

All EC system processes will be controlled by the Wavelonics Automated Operator system. This system incorporates control and adjustment of all system processes to a single touch-screen user interface. The interface allows the operator to observe system performance and operations and

ascertain if there are any elements that require operator attention. In standard operation, the system is set to run automatically and send system alerts to operators via phone.

4.6.1.4. POST-TREATMENT SETTLING TANK & FILTRATION

Following EC treatment, waste water will be pumped to post-treatment settling tank(s) prior to passing through a media filter to remove suspended particulates. The post-treatment settling tank(s) will have a minimum storage capacity of 40,000 gallons. Additional post-treatment settling tank(s) ~~will~~ may be added to the treatment system ~~as necessary~~ to manage the throughput of waste water generated during construction. Consequently, construction activities may also be modified to reduce the excavation area requiring dewatering to reduce the volume of water to be treated. From the post-treatment settling tanks, water will pass to a ~~A~~ high-pressure media filtration system ~~is used~~ to remove any remaining suspended solids and heavy metals that have not settled out of the water column due to specific gravity or particle size.

Commented [EL37]: Specify the criteria to be used with determining whether additional settling tanks must be added to the system design and what contingencies will be in-place to sustain the continuity of cleanup actions pending arrival of the additional tanks.

Commented [PL38]: See additional text.

4.6.1.5. WATER QUALITY DISCHARGE VALVE

Prior to the granular activated carbon treatment stage, all EC treated water will pass through an automated ~~the~~ water quality discharge valve located in the EC treatment trailer that~~. This valve~~ measures turbidity and pH in real-time. Turbidity shall not exceed background levels by more than 5 NTUs when the background is 50 NTU or less; or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU. Additionally, pH shall not exceed background levels by more than 10 percent. ~~and only allows discharge of effluent water that meets user defined criteria~~. Non-compliant water is automatically returned to the pre-treatment tanks for re-treatment via the integrated auto-actuated re-circulation valve.

Commented [EL39]: Revise Figure 1 Note 8 to clarify that the only measured water quality criteria are pH and conductivity; surface water criteria are not included.

Commented [PL40]: Note on Figure 8 corrected. Revised text to define turbidity and pH criteria.

4.6.1.6. GRANULAR ACTIVATED CARBON SYSTEM

A granular activated carbon (GAC) system will be employed to treat waste water for petroleum-related compounds. The GAC system will have a minimum of two carbon vessels operating in series. Water quality testing (see Section 4.6.3) will be conducted to evaluate water effluent of the primary vessel for breakthrough of constituents exceeding Idaho Administrative Code (2012) surface water quality criteria (see Table 1). Testing parameters and frequency are summarized in Section 4.6.2.

When test results indicate that the primary GAC vessel has become spent (i.e., breakthrough of constituents above permitted limits are detected), the primary carbon vessel will be replaced. At this time the secondary vessel will be moved to the primary position, and a new carbon vessel will be added in the secondary position. This sequence of changing out carbon vessels will ensure continuous treatment and eliminate the potential for contaminants passing through the treatment system.

4.6.2. *System Startup Testing*

Following installation of the initial water treatment system, water quality sampling activities will be conducted to evaluate the performance of the treatment system and ensure that effluent water generated is in compliance Idaho surface water standards (IAC 58.01.02). The general layout of the treatment system layout during initial system startup is depicted on Figure 8.

Commented [EL41]: Provide a system figure depicting the startup system design and the sequence for system startup testing. The figure should show the proposed settling tanks and a storage capacity of 50,000 gallons of treated effluent while awaiting analytical laboratory results, and the influent and effluent locations where water samples will be collected for off-site analysis.

Commented [PL42]: A new Figure 8 has been developed to show the system setup during initial testing. Sampling locations are presented in the SSSP. Batch sampling during system startup is will be conducted as allowed by EPA's email on February 21, 2013.

At system startup, groundwater generated from the excavation will be pumped through the treatment system, ~~and~~ tested and released to the St. Joe River in 10,000 gallon batches. Water

will only be release if upon confirmation that . the Initial test results will be used to confirm compliance with the water quality discharge criteria presented in Table 1. If initial test results exceed the water quality discharge criteria, modifications to the water treatment system will be madeas appropriate and batched water represented by the failed sample will be re-circulated through the treatment system for and follow up testing. will be performedcomplete. Following confirmation that the water treatment system is operational as demonstrated by successfully treating five consecutive 10,000 gallon batches (50,000 gallons total), system startup sampling will transition to operational testing as described in Section 4.6.3.

No water will be discharged from the system until confirmation that the water quality discharge criteria presented in Table B-2 of the SSSP (Appendix B) has been achieved as demonstrated by treating a minimum of 50,000 gallons of wastewater through the system.

System startup sampling methods and procedures are presented in the SSSP and QAPP (Appendix B and C, respectively). In general, tTreated water generated during system startup will be batched and sampled in 10,000 gallon increments pending initial and subsequent 10,000 gallon batch test results. If the test results indicate that the water is not suitable for discharge, the water will be recirculated through the treatment system, retreated, and retested. If test results indicate that the water is suitable for discharge, the water will be released to the St. Joe River or used on-Site. In accordance with the SSSP, treated water samples for system startup testing will be obtained from influent and effluent sample locations and submitted for chemical analysis of metals, SVOCs, PAHs, and PCBs and diesel and heavy oil range petroleum hydrocarbons. System startup sampling locations, methods and procedures are presented in the SSSP and/or QAPP (Appendix B and C, respectively). In addition to the chemical analysis, effluent water will be measured in the field for settable solids, turbidity, temperature, electric conductivity, and pH as well as evaluated for the presence of surface water sheen. Settable solids shall not exceed 1 milligram per liter per hour. Turbidity shall not exceed background levels by more than 5 NTUs when the background is 50 NTU or less; or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU. Electric conductivity, temperature and pH shall not exceed background (i.e., surface water conditions upstream of the Site) by more than 10 percent. Effluent water exhibiting sheen (oil film with rainbow color) will not be discharged to the St. Joe River. The startup testing of the water treatment system shall consist of treating a minimum of 50,000 gallons (i.e., five batches of 10,000 gallons) of water collected from the Site. Batch sample results will be used to confirm that the treatment system is capable of meeting the discharge requirements. During system startup testingthis time, flow monitoring and pressure readings will be recorded from all of the gauges and flow meters in order to demonstrate that the system is operating properly. Adjustments will be made to the system as necessary in order to maintain a continuous flow rate while meeting the operating requirements for each system component. Only water that is suitable for discharge will be released to the St. Joe River or used on-Site. The discharge point for the treatment system will generally be located downstream of the Site. The actual discharge point will be determined in the field based on the actual location of the water treatment system.Following the successful treatment of 50,000 gallons, system startup testing will transition to operational testing as described in the following section.

Commented [EL43]: Section 4.6.1.2 states two of the 20,000 pre-treatment tanks may be used to hold treated effluent during the system startup testing phase. Describe how use of these tanks may affect construction/excavation activities.

Commented [PL44]: The text in section 4.6.1.2 has been revised to allow storage of up to 60,000 gallons.

Commented [EL45]: Indicate where the discharge point will be located.

Commented [PL46]: See additional text below.

Commented [EL47]: Describe where the discrete 10,000 gallon batches of treated water will be staged while awaiting laboratory results, and note the storage location in startup figure requested in Comment EL25.

Commented [PL48]: Upon confirmation that each 10,000 gallon batch meets the discharge criteria, it will be released to the St. Joe River or used on Site as requested by Potlatch and approved by EPA

Commented [EL49]: Indicate where the discharge point will be located.

Commented [PL50]: See additional text below.

4.6.3. *Operational Testing*

Operational testing of the water treatment system will be conducted in accordance with the SSSP once system startup~~initial~~ samples confirm that treated waste water meets the federal criteria and Idaho surface water quality discharge criteria and EPA approves the transition to full operation. Operational water samples will be collected on a weekly basis during normal operation of the system to monitor the discharge concentrations. Operational samples will be obtained from the influent water after it has passed through the OWS (influent sample), between the primary and secondary GAC vessel (breakthrough sample) and after following GAC treatment (effluent sample). Operational sampling locations, methods and procedures are presented in the SSSP and/or QAPP (Appendix B and C, respectively). The general layout of the treatment system layout during operational use is depicted on Figure 9.

Influent and effluent samples will be submitted for chemical analysis of ~~diesel and heavy oil-range petroleum hydrocarbons,~~ SVOCs, PAHs, PCBs and metals. Water samples collected between the primary and secondary GAC vessels will only be submitted for chemical analysis of PAHs to monitor for contaminant breakthrough. In addition to chemical analysis, effluent water will be measured in the field for settable solids, turbidity, electric conductivity, and pH as well as evaluated for the presence of surface water sheen. Settable solids shall not exceed 1 milligram per liter per hour. Turbidity shall not exceed background levels by more than 5 NTUs when the background is 50 NTU or less; or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU. Electric conductivity, temperature and pH shall not exceed background by more than 10 percent. Effluent water exhibiting sheen (oil film with rainbow color) will not be discharged to the St. Joe River.

If effluent water sample results exceed the system discharge requirements (i.e., chemical criteria presented in Table 1 or field measure parameters presented above), the system will be shut down and adjustments made ~~, as necessary,~~ to meet the discharge requirements. Any ~~E~~exceedance~~s~~ will be recorded and promptly reported ~~as required~~ to EPA.

~~In addition to chemical analysis, effluent water will be measured in the field for settable solids ,and turbidity and evaluated for the presence of surface water sheen. Settable solids shall not exceed 1 milligram per liter per hour. Turbidity shall not exceed background levels by more than 5 NTUs when the background is 50 NTU or less; or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU. Effluent water exhibiting sheen (oil film with rainbow color) will not be discharged to the St. Joe River.~~

4.7. Site Sampling and Monitoring

Specific details of the sampling activities (i.e., sample locations, frequency, field and laboratory analysis, and rational) that will be conducted during the removal action are presented in the SSSP (Appendix B) and summarized in the following sections.

4.7.1. *Soil Excavation*

Soil excavation activities will be performed to remove clean overburden and contaminated soil identified by field screening methods (discussed in Section 4.4.1) from the Site as described in previous sections. At the final limits of excavation, sidewall and base soil samples will be obtained

Commented [EL51]: Note where effluent samples will be collected.

Commented [PL52]: Sampling locations for the initial system setup and operational setup are presented in the SSSP as indicated above.

and submitted for chemical analysis ~~at an off-Site analytical laboratory~~ to identify the baseline concentrations for natural attenuation monitoring in accordance with the SSSP presented in Appendix B. Sidewall samples will be obtained at a frequency of one per 300 linear feet of excavation sidewall. Excavation sidewall samples will be obtained at the approximate vertical midpoint of the observed petroleum-contaminated soil layer. ~~No~~ Potlatch will use discretion with respect to collection of sidewall samples ~~will be collected~~ from the transitions between the Potlatch ~~Property~~ and FHWA ~~P~~properties~~y~~, Potlatch and IDL properties, or Potlatch and Bentcik ~~P~~property~~ies~~ since the sidewall is comprised of clean backfill material placed by EPA. Sidewall samples will be collected from these transitions to confirm any areas suspected to have been re-contaminated as part of the transition area construction. Base samples will be obtained on a grid pattern with grid cells measuring approximately 150 feet (along the plume length) by approximately 100 feet (along the plume width). The location and orientation grid pattern being used for this removal action is based on EPA's 2012 removal action base sampling grid (E&E, 2012).

Samples will be collected directly from the soil surface or, depending on stability of the excavation and access to the selected sample location, may be collected from the bucket of the backhoe performing the excavation. Samples collected using a backhoe will be between the bucket teeth away from the metal surfaces. Samples will be placed in laboratory supplied containers, filled to minimize headspace and placed in a cooler with ice pending chemical analysis.

The approximate locations of base and sidewall samples based on the maximum expected limits of excavation are shown on Figure B-2 of the SSSP (Appendix B). The actual soil sample locations will be determined in the field based on the actual excavation limit.

4.7.2. *Excavated Soil*

During excavation, field screening methods (discussed in Section 4.4.1) will be used to determine the contact between the petroleum contaminated soil and clean overburden. A visual marker (i.e, white geotextile fabric) placed by EPA during the 2012 removal action marks the contact between the contaminated soil and clean transition zone ~~clean~~ material placed by EPA. Overburden and clean transition zone ~~clean~~ material will be temporarily stockpiled on Site for reuse as backfill.

If requested by the landfill, soil in which field screening methods indicates petroleum contamination will be stockpiled on Site and sampled at a frequency determined by the receiving landfill, and submitted ~~to an off-Site analytical laboratory~~ for chemical analysis for disposal characterization in accordance with the SSSP presented in Appendix B. In addition, contaminated soil generated from the saturated zone of the excavation will be allowed to drain until ~~a representative~~ samples from the stockpile passes the PFLT (EPA Method 9095).

In the event that buried debris such as asbestos pipes, LUSTs, batteries, capacitors, transformers or similar are encountered, representative material and/or soil samples will be obtained to evaluate whether the material designates as a hazardous or dangerous waste. Any material and/or soil designated as a hazardous or dangerous waste will be segregated and stockpiled on Site pending treatment, waste profile authorization, and/or off-Site disposal. Material designating as a hazardous or dangerous waste will be handled in accordance with applicable state and federal regulations.

Commented [PL53]: SSSP indicates the procedures for chemical testing, including the use of an off-site lab.

Commented [PL54]: The use of an off-site lab is noted in the SSSP for the various samples that will be obtained.

Commented [EL55]: The clean transition area sidewalls need not be sampled. See also SSSP Section 3.1.1.3.

Commented [PL56]: Noted. Samples will be collected to confirm soil quality where recontamination is suspected to have occurred

Commented [PL57]: The SSSP presents the procedures for stockpile sampling, including the use of an off-site lab.

4.7.3. *Import Fill Material*

Prior to the import of fill material from an off-sSite source, representative samples of the source material will be collected and submitted for chemical analysis of diesel- and heavy oil-range petroleum hydrocarbons, SVOCs, VOCs, and PCBs, and RCRA metals as described in the SSSP presented in Appendix B. Additionally, representative samples of the source material will also be collected and tested to determine maximum dry density as necessary, using a modified proctor by ASTM D1557. Modified proctor test results will be used to evaluate compaction during backfill placement.

Commented [EL58]: The definition of "representative samples" must be addressed in the SSSP.

Commented [PL59]: Removed the term "representative" for this and the SSSP documents.

4.7.4. *Treated Water*

Water samples will be obtained from the water treatment system during initial system startup and system operation. Water samples representative of the influent (pre-treatment) and effluent (post-treatment) will be analyzed for petroleum hydrocarbons, SVOCs, PAHs, PCBs, and metals in influent to evaluate performance of the treatment system and ensure that water being discharged to the St. Joe River meets the federal and State surface water discharge criteria (chemical analyticalwater quality discharge criteria isare presented in Table B-2, B-2 of the field measured water quality criteria are discussed in Section 4.6.2 and 4.6.3).

Product recovered from the water treatment system will be sampled and tested as required for acceptance and transport to a licensed disposal or recycling facility.

4.8. General Construction and "Green" Practices

BMPs will be employed throughout construction for control of erosion, stormwater, and fugitive dust, and to prevent adverse impacts on wildlife and their habitats. The BMPs to be implemented during the Potlatch Property removal action will be based on the Catalog of Stormwater Best Management Practices for Idaho Cities and Counties (IDEQ, 2005), the U.S. Army Corps of Engineers Nationwide Permit 38, and professional experience.

In addition to implementation of Site BMPs, the following "green" practices will also be employed:

- **Reuse and Recycle** – Field screening methods will be used to determine whether To the extent practical, Site materials used to construct the staging areas and contaminated soil staging pads (i.e., soil used to construct the 2-foot-tall earthen dikes) may will be reused to backfill the excavation areas. Overburden soil, transition zone backfill, and shoreline armor will be reused on the Site to minimize the quantity of additional materials needed to backfill and stabilize the Site. To the extent practical, larger rock will be separated from the contaminated soil, decontaminated and reused for backfill. Vegetation (i.e., trees and bushes) willmay be used to the extent practical for stormwater bio-filtration and habitat restoration. Additionally, BMPs used for sSite controls (i.e., silt fencing, swales, stormwater piping, etc.) will be reused to the extent practical to reduce overall construction waste. Metal debris generated from the excavation will be transferred from the Site for recycling.
- **Stormwater Management** – BMPs will be used to slow stormwater runoff (i.e., erosion control) and divert water to infiltration areas or away from excavation areas to minimize the volume of waste water requiring treatment. Treated waste water will be used for dust control and equipment washing as appropriate to minimize the need for imported water to the Site. In

addition, stormwater BMPs such as silt fencing may also serve as ~~s~~Site controls (i.e., fencing) to prevent the entry of unauthorized personnel to the Site from the St. Joe River.

- **Reduction of Vehicle Emissions and Fuel Consumption** – Staging areas and soil stockpile locations will be positioned at the Site to reduce the distance that vehicles travel to reduce excess vehicle emissions (i.e., placement of backfill stockpiles adjacent to excavation areas and reuse of on-~~s~~Site materials). Opportunities will be explored to locate and identify local backfill and gravel sources for import material. Vehicles not in use will be shut off to reduce excess fuel consumption.

4.9. Site Monitoring and Inspections

Specific details of the monitoring activities (i.e., sample locations, frequency, field analysis, and rational) and Site inspections that will be conducted during the removal action are presented in the SSSP (Appendix B) and, Contingency Plan (Appendix E), respectively, and are summarized in the following sections.

4.9.1. *General Construction BMPs*

The contractor and field inspectors for Potlatch will be responsible for monitoring and inspection of site controls and BMPs to ensure the protection the community, workers, and the environment throughout the duration of the removal action. Site controls and BMPs will be inspected regularly to ensure proper function. Site controls and BMPs will be modified as appropriate to meet the project objects.

4.9.2. *Air*

Perimeter air quality will be monitored regularly during construction activities to assess the impact of Site work on the community, workers, and the surrounding environment. Real-time monitors (AeroTrak Handheld Particle Counter or similar) will be utilized to measure particulate matter (particles less than 10 microns) in the air. The real-time monitors will be utilized at upwind (background), mid-Site, and downwind locations of Site activity to determine and record perimeter background and impacted conditions. Monitoring for Site worker health and safety within the Site will be completed in accordance with each parties respective HASP. Engineering controls will be used during construction (e.g., wetting or covering exposed soil and stockpiles), ~~as necessary,~~ to prevent the off-~~s~~Site transport of airborne particulates.

Commented [EL60]: Identify the instrument to be used to measure real-time particulate matter (e.g., will it be the instrument identified in SSSP Section 3.4.4?).

Commented [PL61]: See additional text.

4.9.3. *Surface Water Quality*

Surface water quality will be monitored regularly during construction activities at upstream, mid-Site, and downstream locations as generally shown on Figure B-2 of the SSSP to assess the potential impact of Site work on the St. Joe River. The proposed upstream location has been selected to assess background conditions. The proposed downstream location has been selected to be downgradient of the planned excavation areas and ~~waste~~treated water treatment discharge point. A mid-Site location will be determined in the field based on the actual location of the water treatment system and discharge point and will be used to assess the potential impacts to surface water quality from the discharge of the treated water. The following parameters will be measured on a daily~~weekly~~ basis during excavation, ~~and/or~~ active waste water discharge, and/or ~~on a daily basis~~ during shoreline excavation activities:

Commented [EL62]: Describe the purpose of the mid-Site location, particularly with respect to the treated water discharge point.

Commented [PL63]: See revised text.

- Acidity (pH);
- Electrical conductivity (EC);
- Dissolved oxygen (DO);
- Turbidity; and
- Temperature.

Monitoring will be conducted on a daily basis to provide prompt assessment during construction to identify any surface water quality problems that may be occurring as a result of construction activities, and to demonstrate compliance with legal and other monitoring requirements, including the water quality criteria and/or targets for the project. Field parameters of surface water pH and temperature will be measured using a Hanna Instruments combination meter or similar. Surface water ~~T~~turbidity will be measured using a Lamont turbidimeter or similar. If a water quality problem is indicated from the monitoring results, appropriate actions will be implemented for identification and management of the problem.

4.10. Site Stabilization

Ground surfaces at the Site affected by the removal action will be restored using stockpiled overburden soil, or imported clean backfill to the approximate grade shown on Figure 7. The re-graded area, and other areas disturbed during construction~~,~~ will be seeded.

Stabilization ~~Re-vegetation/restoration~~ of these areas is described in the following sections.

4.10.1. *Soil Disturbance Areas*

Disturbed areas of the Site resulting from excavation, soil/equipment staging, and/or the installation of access roads will be re-vegetated with native grasses to minimize the potential for erosion. Native seed mixtures for the area consistent with U.S. Department of Agriculture (USDA) or other local agency-recommended (e.g., U.S. Forest Service) species will be used to stabilize Site soil. Seed mixtures will be applied using one or more of the following methods:

- Hydroseeder (option of combining seeding, tackifiers, and tracers);
- Blower equipment with adjustable disseminating device capable of maintaining a constant, measured rate of material discharge that will ensure an even distribution of seed at the rate specified;
- Power-drawn drilling equipment or seeders; and/or
- Manual seeding method.

Seed will be applied on firm soil with a roughened surface. Topsoil amendments may ~~will~~ be used ~~as needed~~ to create favorable conditions for successful seed establishment. Areas compacted with vehicle traffic will be disked and/or roughened prior to seed application. E~~If necessary,~~ exposed areas steeper than 3H:1V will be stabilized with coir matting (or similar) to minimize erosion.

4.10.2. *St. Joe River Shoreline*

Reconstruction of the shoreline will occur after excavation activities are completed and will consist of replacing the shoreline slope, including rip rap to resemble the existing shoreline grade that was in place prior to removal and to match the adjacent sections of shoreline protection.

Following restoration of the shoreline, an approximately 15-foot wide riparian corridor from the top of the river bank slope will be re-vegetated with native plant species to minimize erosion, prevent water quality degradation, and restore overall environmental functions along the St. Joe River. Riparian enhancement may include planting native trees such as western larch (*Larix occidentalis*), black cottonwood (*Populus trichocarpa*), and Douglas fir (*Pseudotsuga menziesii*) and shrubs such as snowberry (*Symphoricarpos albus*), red-osier dogwood (*Cornus stolonifera*), and western serviceberry (*Amelachier alnifolia*). Willow whips (*Salix species*) will be inserted within the reconstructed river bank. Trees will be planted on approximately 15-foot centers, while shrubs will be planted on approximately 5-foot centers.

5.0 NATURAL ATTENUATION PERFORMANCE GROUNDWATER MONITORING

Following completion of the removal action, a Natural Attenuation Performance Groundwater Monitoring Plan to evaluate ~~Site~~ the post-construction condition of the Site will be prepared by Potlatch and submitted to EPA for approval. Included in this plan will be the location and number of existing and new groundwater monitoring wells, constituents of concern that will be evaluated, and frequency and duration of monitoring. A draft version of this plan will be submitted to EPA for review and comment prior to finalization.

A report summarizing the results of each groundwater monitoring event will be prepared upon completion of the EPA-approved groundwater monitoring program and submitted to EPA for review and comment prior to finalization.

6.0 QUALITY ASSURANCE AND CONTROL

This section describes general quality assurance (QA) and quality control (QC) standards and procedures that will be implemented during the removal action, including quality management, contractor quality control, construction monitoring and field documentation, analytical QA/QC and health and safety.

6.1. Quality Management Plan

GeoEngineers' quality system is described in the Quality Management Plan (QMP) in Appendix A. The QMP described the quality systems used by GeoEngineers for planning, implementing, documenting, and assessing the effectiveness of activities to support environmental studies and obtain legally defendable environmental data.

6.2. Contractor Quality Control

The contractor will maintain QC records. These records will include evidence that the required inspections or tests have been performed, including the type and number of inspections or tests

involved; results of inspections or tests; nature of defects, deviations, causes for rejection, proposed corrective action, and corrective actions taken.

6.3. Construction Monitoring and Field Documentation

A comprehensive record of field activities will be maintained and submitted to EPA as part of the removal action report, along with all other project-related documentation. Field documentation for this project will include field notes, field forms, field reports, photographs, and chain-of-custody forms for samples submitted for analytical testing. The field documentation will record construction, sampling, and monitoring activities, sampling personnel, and weather conditions, as well as decisions, corrective actions, and/or modifications to the project plans and procedures discussed in this Work Plan.

6.4. Analytical QA/QC

Analytical Quality Assurance/Quality Control (QA/QC) is described in the QAPP (Appendix C). The QAPP describes soil and groundwater sampling, analysis, and QC procedures that will be implemented to produce chemical and field data that are representative, valid, and accurate for use in evaluating the effectiveness of the removal action.

7.0 HEALTH AND SAFETY

Construction activities will be performed in accordance with the requirements of the Federal Occupational Safety and Health Act (29 CFR 1910, 1926). These regulations include requirements that workers are to be protected from exposure to contaminants.

A ~~s~~Site HASP~~Health and Safety Plan (HASP)~~ describing actions that will be taken to protect the health and safety of Potlatch's, GeoEngineers' and Pacific Pile and Marine's (PPMs) personnel are~~is~~ provided in Appendix D. Potlatch, GeoEngineers and PPM personnel will operate under their own respective HASP during Site work.

Commented [EL64]: An integrated Site HASP (Potlatch, GeoEngineers, Pacific Pile and Marine) will be prepared and included with the revised HASP. Also, include copies of the Potlatch and the Pacific Pile and Marine HASPs.

Commented [PL65]: See Appendix D.

8.0 ROLES AND RESPONSIBILITIES

The removal action will be performed by Potlatch and their contractors under oversight by EPA. Specific details about the key participants and interactions with EPA are summarized below.

- **EPA –** Oversight of the removal action will be conducted by the Federal On-Scene Coordinator for EPA.
- **Potlatch –** The removal action will be managed by Potlatch.
- **GeoEngineers, Inc. –** Environmental engineer for Potlatch for the removal action. Their primary responsibilities will be to provide on-Site technical assistance and engineering support and will be responsible for field-screening, collecting analytical samples, and documenting the removal action.
- **Pacific Pile and Marine (PPM) - ~~Pacific Pile and Marine –~~** Cleanup ~~sub~~contractor for Potlatch ~~GeoEngineers~~ Potlatch for the removal action. ~~that will implement the removal action construction.~~ Their primary responsibilities will be to mobilize the personnel, equipment, and

Commented [PL66]: PPM is a contractor to Potlatch as indicated.

supplies necessary to implement and conduct the removal action. ~~In addition, Pacific Pile and Marine (PPM) will be responsible for the following:~~

- ~~**Implementation of the rem**oval action;~~
- ~~**Improving/maintaining acc**ess roads;~~
- ~~**Implantation and monitori**ng of BMPs; and~~
- ~~**Spill prevention and cont**rol.~~
- ~~GeoEngineers, Inc. – Environmental engineer for Potlatch for the removal action. Their primary responsibilities will be to provide on-Site technical assistance, engineering support and will be responsible for field screening, collecting analytical samples, and documenting the removal action.~~

9.0 PUBLIC OUTREACH

A Community Outreach Plan, presented in Appendix F, has been prepared to facilitate local stakeholder awareness and two-way communication between the community surrounding the Avery Landing Site, ~~and~~ Site property owners and Potlatch to ensure that people ~~residents~~ are informed and provided opportunities to ask questions about the project.

10.0 PROJECT SCHEDULE

At this time, it is anticipated that PPM ~~the cleanup contractor for the Potlatch~~ will mobilize to the Site in late ~~May~~ April 2013 to begin implementation of Site and access controls prior to the start of excavation. During this period, BMPs will be installed, staging areas prepared, water treatment system established, and monitoring and/or extraction wells decommissioned. It is anticipated that removal activities will begin after the required BMPs ~~controls~~ and other mobilization activities are in place, ~~–~~and all Site activities are expected to be ~~will be~~ completed by October 2013. The proposed schedule for the Avery Landing removal action is summarized in the following table. No Site work will be performed until the project Work Plan has been approved by EPA. Additionally, no Site work will occur on the Bentcik property, the IDL property, or the FHWA property without prior approval by EPA and the respective land owners.

Note that the construction schedule will be updated as part of the finalization of this Work Plan following completion of contractor procurement activities that are currently underway.

Activity	Estimated Date
Pre-construction coordination with city, county, and state officials; utilities and FHWA	Currently ongoing
Pre-construction public meeting	TBD (Expected late April/early May)
Contractor mobilization to the Site	Late ~~May~~ April 2013
Installation of Site Controls are complete	Early 2013

Activity	Estimated Date
Removal activities begin	Early June 2013
Removal activities are completed	~~Late September~~ Mid-August2013
Contractor demobilizes from the Site	~~Early October~~Late August 2013

11.0 REPORTING

11.1. Removal Action Progress Reporting

~~Throughout the duration of the removal action, weekly reports will be prepared and submitted to EPA for review.~~ A written progress report will be submitted to the designated EPA On-Scene Coordinator every 7th day after initiating the mobilization of persons, equipment or materials to the Site, and shall continue until the beginning of post-removal action monitoring or as may be directed by EPA. Each weekly progress report will describe all significant develops during the preceding period, including T~~t~~he ~~weekly reports will provide a summary of~~ actions performed and/or completed, analytical data received and their results, planned actions for the subsequent reporting period and any issues or problems arising during the reporting period and their resolution or proposed resolution.

11.2. Removal Action Report

Within 60 days of completion of all on-Site ~~Upon completion of~~ cleanup ~~construction~~ activities, a draft Removal Action Report will be completed by Potlatch and will be submitted to EPA for review and comment. The draft Removal Action Report will include a summary of the following:

- ~~i~~zing the Site description and background;
- ~~,P~~project approach and organization;
- ~~, r~~Removal action activities;
- ~~, f~~Field monitoring and sampling;
- ~~, c~~Community relations;
- ~~, q~~Quality assurance/quality control;
- H~~, h~~ealth and safety; and
- Any ~~difficulties encountered~~ deviations from the Work Plan.

Additionally, copies of ~~along with~~ will be completed by Potlatch. W~~w~~aste manifests, contaminated soil disposal receipts,and photographs, as well as ~~and~~ as-built drawings will be included.~~will be completed by Potlatch~~included in the Removal Action Report. ~~A draft version of the report and~~ will be submitted to EPA for review and comment.

12.0 LIMITATIONS

We have prepared this Removal Action Work Plan for use by the Potlatch during the removal action at the Avery Landing Site. Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions express or implied should be understood.

Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

13.0 REFERENCES

Applied Archeological Research, Inc. (AAR), "Results of a Cultural Resources Survey of the Avery Landing Rail Yard Project Area, Shoshone County, Idaho," prepared for Ecology and Environment, Inc., Seattle, Washington, dated July 20, 2012.

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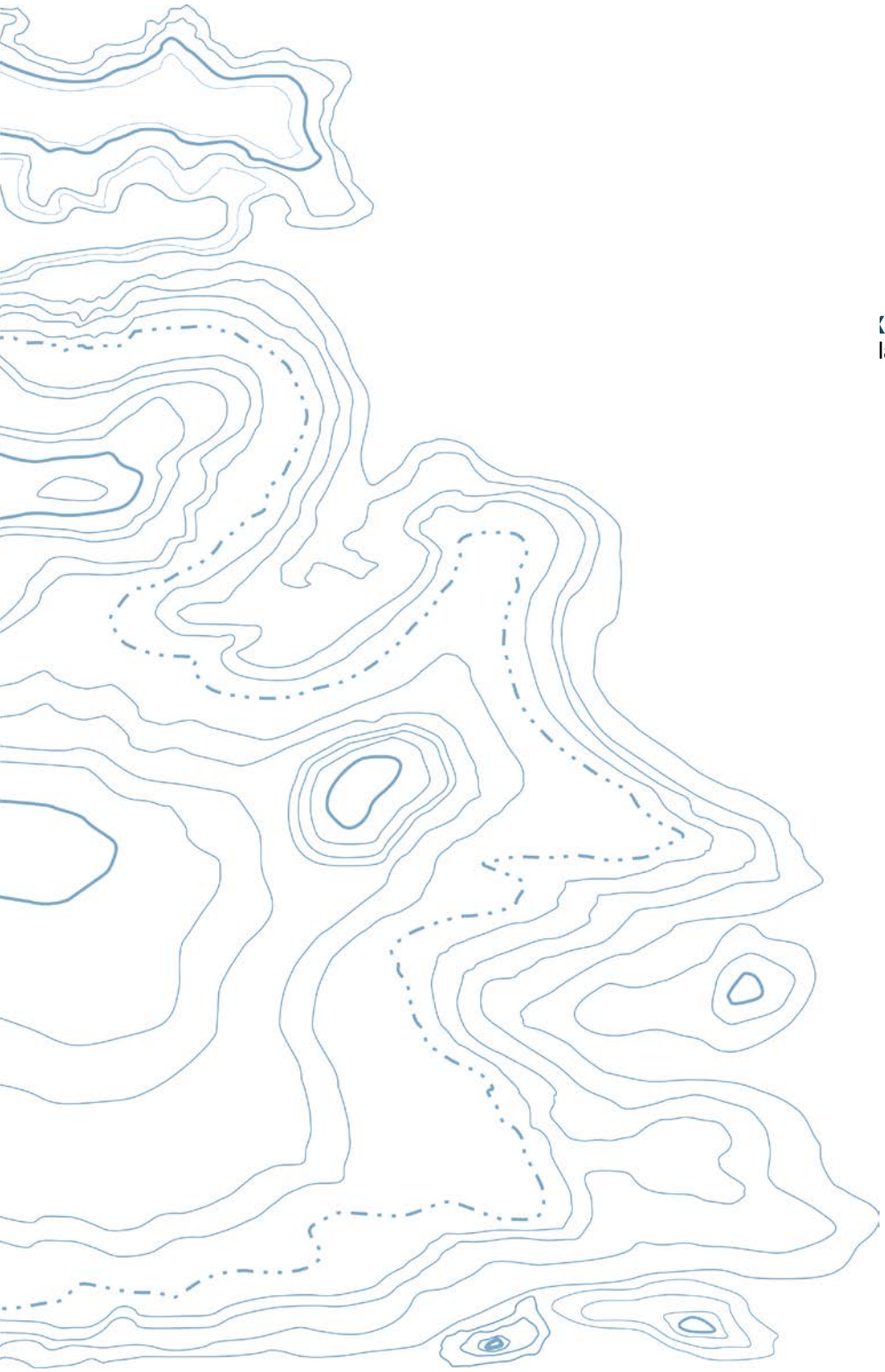

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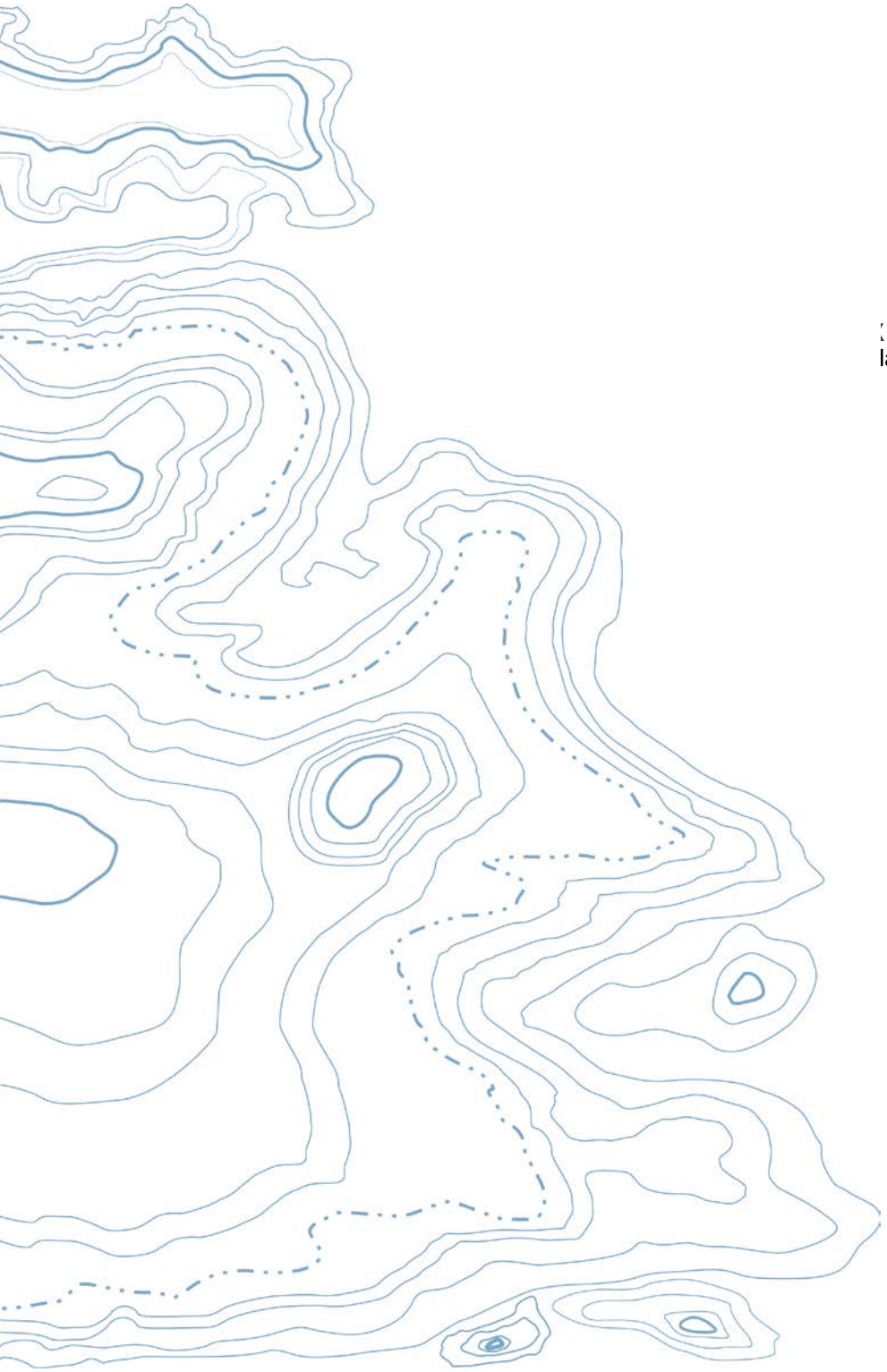

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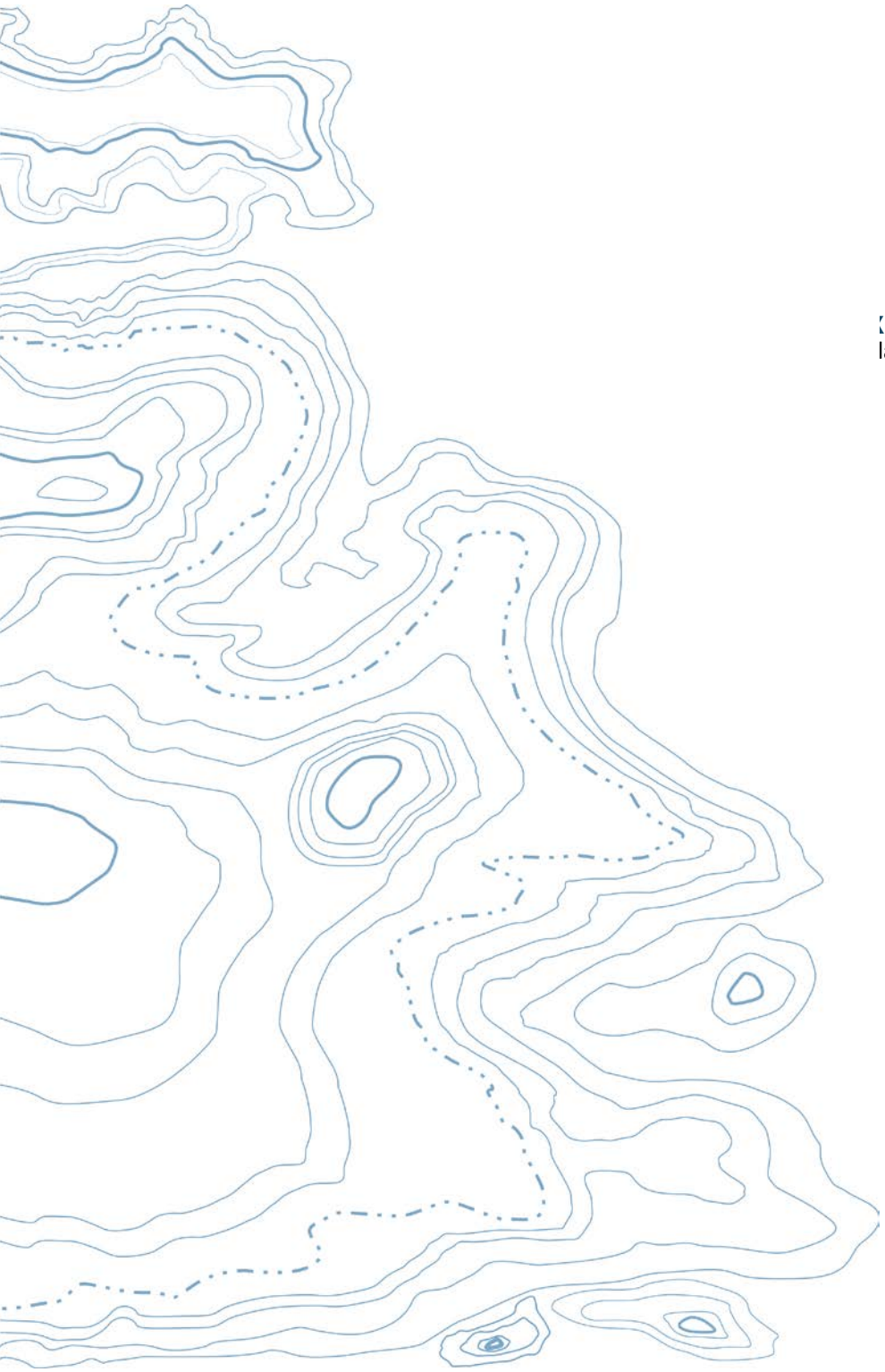

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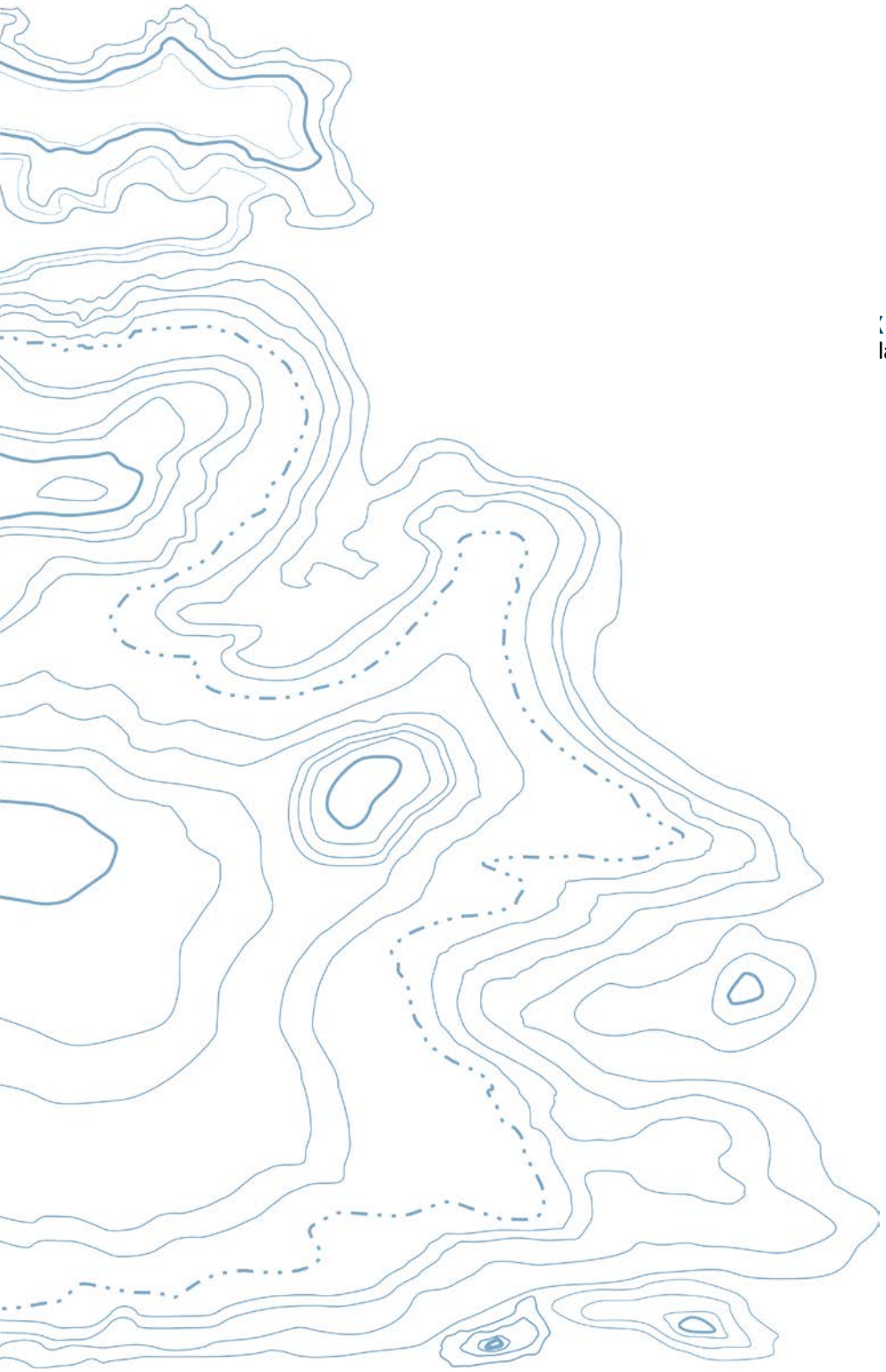

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~~GeoEngineers Health and Safety Plan~~

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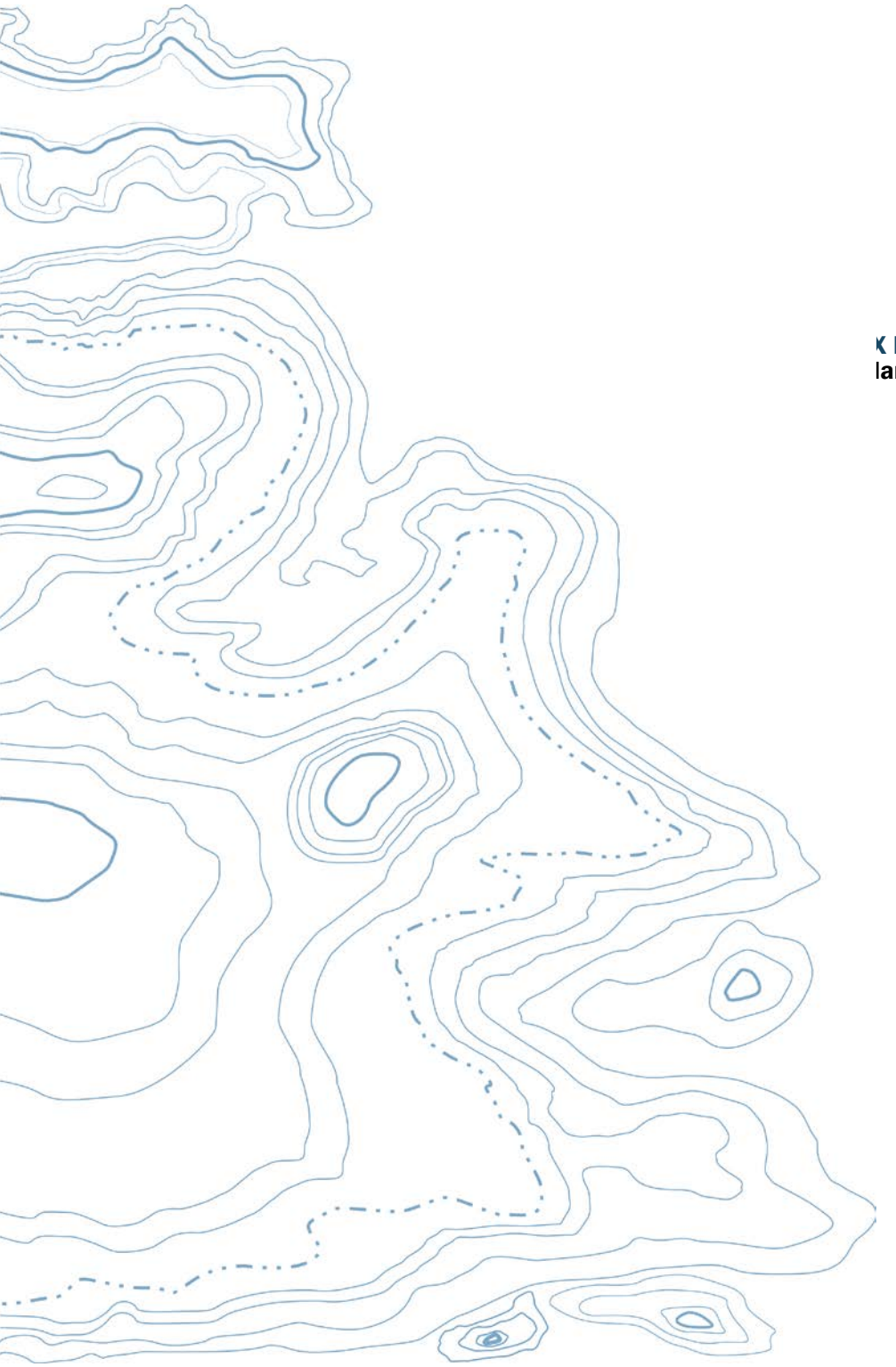
~~Pacific Pile and Marine Health and Safety Plan~~



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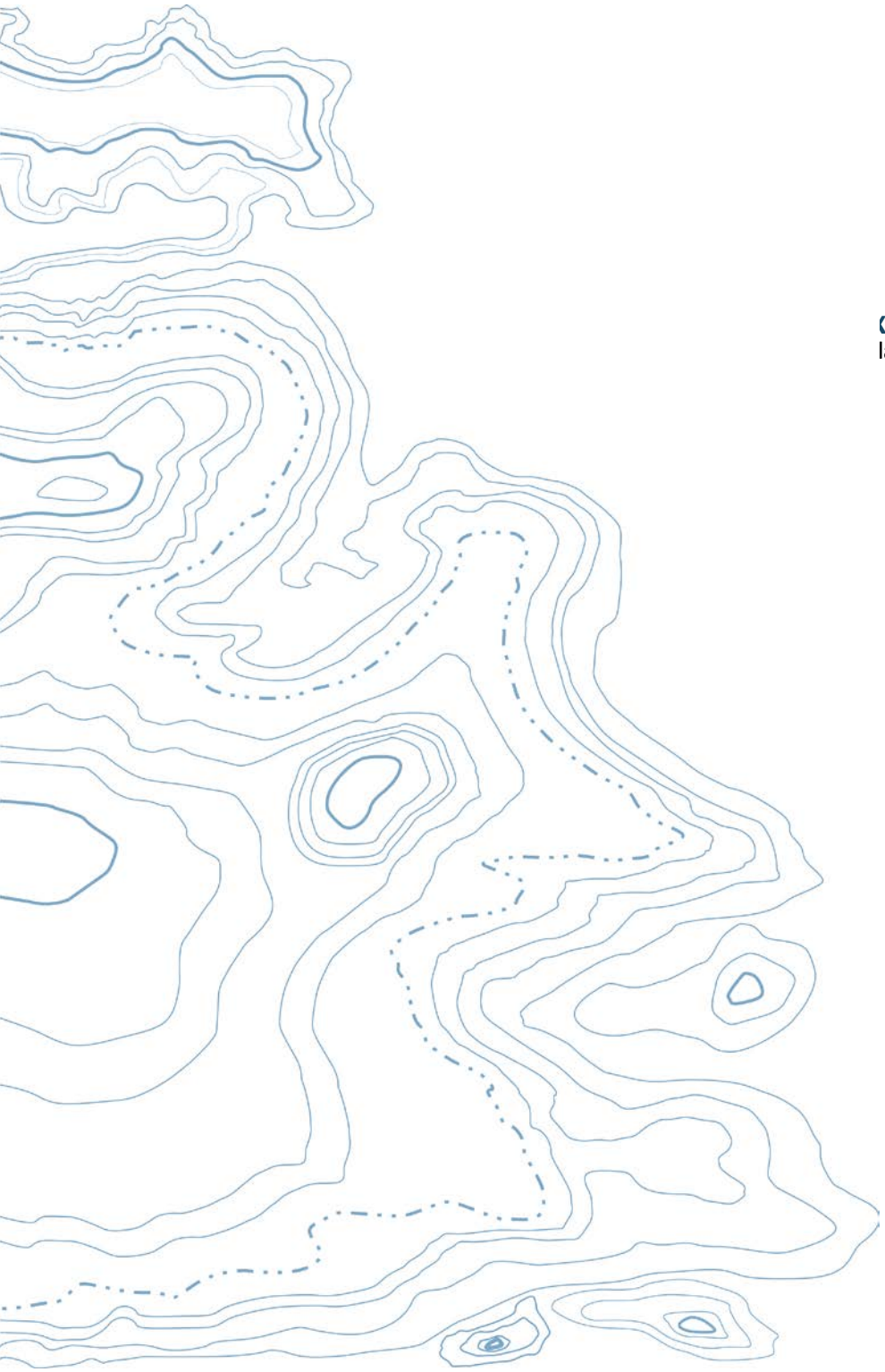

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